



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/572,710

03/17/2006

Dong Zhu

884A.0129.U1(US)

4697

29683 7590 03/28/2008

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE
SHELTON, CT 06484-6212

EXAMINER

HANNON, CHRISTIAN A

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

03/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,710	Applicant(s) ZHU ET AL.	
	Examiner CHRISTIAN A. HANNON	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/17/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is response to applicant's response filed on 12/17/2007. Claims 1-11 & 13-25 are now pending in the present application. **This action is made final.**

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12/17/2007 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 11-14, 15-23 & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinckley et al, a research publication (ACM UIST 2000 Symposium on User Interface Software and Technology, CHI letters 2 (2), pp. 91-100), hereinafter Hinckley.

Regarding claim 1, Hinckley teaches a mobile device comprising a display (Figure 1), a processor for controlling the operation of the mobile device including the display (Page 92, Paragraph 9), an incline sensor arranged to detect inclination of the mobile device in a first plane, wherein the mobile device has an inclinometer, or

accelerometer mode in which the processor received an indication of the detected incline in the first plane from the incline sensor and controls the display to display an item at a position dependent upon the received indication (Page 92, 1st and 2nd Paragraphs; Page 96 Figure 9, 1st Paragraph). However Hinckley does not explicitly state that the prototype device in question is a cellular phone. Hinckley does teach that cellular telephones are within the scope of the teachings (Page 91, Introduction paragraph). Therefore it would be obvious to one of ordinary skill in the art to implement the teachings of Hinckley into a cellular telephone to provide for a more intimate user experience with the phone.

Regarding claim 2, Hinckley teaches claim 1, wherein the processor receives real time indications of the detected incline in the first plane from the incline sensor and controls the display to move an item in real time through positions dependent upon the received indications (Page 92, 9th paragraph; Page 96, 2nd paragraph).

Regarding claim 3, Hinckley teaches claim 1, wherein the display has a first axis and the processor controls the display to display an item at a position along the first axis dependent upon the received indication (Page 96, 2nd paragraph). For defining purposes the applicant has construed when in portrait mode as defined in Hinckley figure 8, the vertical display axis to the left is the y-axis and the horizontal bottom portion of the display is the x-axis.

Regarding claim 4, Hinckley teaches claim 1, wherein the incline sensor is arranged to additionally detect inclination of the mobile telephone in a second plane, orthogonal to the first plane, wherein, in the inclinometer mode, the processor receives

an indication of the detected incline in the second plane from the incline sensor and controls the display to display a further item at a position dependent upon the received indication (Page 96, 6th paragraph). Hinckley teaches a flat rendering that is orthogonal to the directly up right holding of a portable device, and accordingly teaches an associated display controlled via the microprocessor sensing said flat state.

Regarding claim 5, Hinckley teaches claim 4, wherein the processor receives real time indications of the detected incline in the first and second planes from the incline sensor and controls the display to move the item and the further item, in real time through positions dependent upon the received indications (Page 92, 9th paragraph; Page 96, 2nd paragraph, 6th paragraph).

Regarding claim 6, Hinckley teaches claim 4, wherein the display has a first axis and a second axis orthogonal with the first axis and the processor controls the display to display the item at a position along the first axis dependent upon the received indication of the detected incline in the first plane and the further item at a position along the second axis dependent upon the received indication of the detected incline in the second plane (Page 92, 9th paragraph; Page 96, 2nd paragraph, 6th paragraph). For defining purposes the applicant has construed when in portrait mode as defined in Hinckley figure 8, the vertical display axis to the left is the y-axis and the horizontal bottom portion of the display is the x-axis.

Regarding claim 7, Hinckley teaches 1 wherein the incline sensor is additionally arranged to detect inclination of the mobile telephone in a second plane, orthogonal to the first plane and the processor in the inclinometer mode receives a first indication of

the detected incline in the first plane and a second indication of the detected incline in the second plane from the incline sensor and controls the display to display the item at a position dependent upon the received first and second indications (Page 96, 6th paragraph). Hinckley teaches a flat rendering that is orthogonal to the directly up right holding of a portable device, and accordingly teaches an associated display controlled via the microprocessor sensing said flat state.

Regarding claim 8, Hinckley teaches claim 7, wherein the display has a first axis and a second axis orthogonal with the first axis and the processor controls the display to display the item at a coordinate position (i,j), or (c-x,c-y), wherein the first coordinate is dependent upon the received indication of the detected incline in the first plane and second coordinate is dependent upon the received indication for the detected incline in the second plane (Page 96, 5th paragraph).

Regarding claim 9, Hinckley teaches claim 7, wherein the processor received real time indications of the detected incline in the first and second planes from the incline sensor and controls the display to move the item in real time through positions dependent upon the received indications (Page 92, 9th paragraph; Page 96, 1st paragraph).

Regarding claim 11, Hinckley teaches a display (Figure 1), a processor for controlling the operation of the mobile device including the display (Page 92, Paragraph 9) a first incline sensor means for detecting inclination of the mobile telephone when in a first orientation and second incline sensor means for detecting inclination of the mobile device when in a second orientation, the sensors abilities to differentiate the Cartesian x

and y directions are applied as reading on the claim, wherein the mobile device has an inclinometer mode, in which the processor determines an approximate orientation of the mobile device from inputs from the first and second incline sensor means and automatically controls the display to display an item at a position representative of the incline for the determined orientation (Page 92, 1st and 2nd Paragraphs; Page 96 Figure 9, 1st Paragraph). However Hinckley does not explicitly state that the prototype device in question is a cellular phone. Hinckley does teach that cellular telephones are within the scope of the teachings (Page 91, Introduction paragraph). Therefore it would be obvious to one of ordinary skill in the art to implement the teachings of Hinckley into a cellular telephone to provide for a more intimate user experience with the phone.

Regarding claim 13, Hinckley teaches claim 1, for measuring an incline. As interpreted that as the mobile device houses a means for measurement of an incline the current claim is read on (Page 93, 1st paragraph).

Regarding claim 14, Hinckley teaches claim 1, for correcting an incline (Page 96, 4th paragraph).

Regarding claim 15, Hinckley teaches a method comprising when a mobile device is an inclinometer mode detecting inclination of the mobile telephone in a first plane, the x-y Cartesian plane, and controlling a display to display an item at a position dependent upon the detected inclination, landscape vs. portrait display mode (Page 96; Hinckley). However Hinckley does not explicitly state that the prototype device in question is a cellular phone. Hinckley does teach that cellular telephones are within the scope of the teachings (Page 91, Introduction paragraph). Therefore it would be

obvious to one of ordinary skill in the art to implement the teachings of Hinckley into a cellular telephone to provide for a more intimate user experience with the phone.

Regarding claim 16, Hinckley teaches claim 15, comprising receiving real-time indications of the detected incline in the first plane and controlling the display to move an item, in real-time, indications dependent upon the detected inclinations, tilt-scrolling display maneuvering (Page 97, Hinckley).

Regarding claim 17, Hinckley teaches claim 15, wherein the display has a first axis and the method includes controlling the display to display an item at a position along the first axis dependent upon the detected inclination, the y axis of a navigable menu, where tilt speed is correlated with tilt angle (Page 97, Hinckley).

Regarding claim 18, Hinckley teaches claim 15, comprising detecting inclination of the mobile telephone in a second plane, orthogonal to the first plane wherein in the inclinometer mode, the method includes receiving an indication of the detected incline in the second plane and controlling the display to display a further item at a position dependent upon the received indication, dual axis tilt-scroll angle correlated display scrolling (Page 97; Hinckley).

Regarding claim 19, Hinckley teaches claim 18, comprising receiving real-time indications of the detected incline in the first and second planes and controlling the display to move the item and the further item, in real-time through positions dependent upon the received indications. Hinckley teaches that controls of a display may be variably controlled via dual axis tilt sensor, that is forward and back rotation into the z axis of the x-y Cartesian plane could control up down scrolling as left and right rotation

Art Unit: 2618

into the z plane of the x-y Cartesian plane could control left to right scrolling of a display (Page 97; Hinckley).

Regarding claim 20, Hinckley teaches claim 18, wherein the display has a first axis and a second axis orthogonal with the first axis and the method includes controlling the display to display the item at a position along the first axis dependent upon the received indication of the detected incline in the first plane and the further item at a position along the second axis dependent upon the received indication of the detected incline in the second plane. Hinckley teaches that controls of a display may be variably controlled via dual axis tilt sensor, that is forward and back rotation into the z axis of the x-y Cartesian plane could control up down scrolling as left and right rotation into the z plane of the x-y Cartesian plane could control left to right scrolling of a display (Page 97; Hinckley).

Regarding claim 21, Hinckley teaches claim 15, comprising detecting inclination of the mobile telephone in a second plane, orthogonal to the first plane and when in the inclinometer mode, the method includes receiving a first indication of the detected incline in the first plane and a second indication of the detected incline in the second plane and controlling the display to display the item at a position dependent upon the received first and second indications. Hinckley teaches that controls of a display may be variably controlled via dual axis tilt sensor, that is forward and back rotation into the z axis of the x-y Cartesian plane could control up down scrolling as left and right rotation into the z plane of the x-y Cartesian plane could control left to right scrolling of a display (Page 97; Hinckley).

Regarding claim 22, Hinckley teaches claim 21, wherein the display has a first axis and a second axis orthogonal with the first axis and the method includes controlling the display to display the item at a co-ordinate position (i,j) wherein the first coordinate is dependent upon the received indication of the detected incline in the first plane and a second coordinate is dependent upon the received indication of the detected incline in the second plane. Hinckley teaches that controls of a display may be variably controlled via dual axis tilt sensor, that is forward and back rotation into the z axis of the x-y Cartesian plane could control up down scrolling as left and right rotation into the z plane of the x-y Cartesian plane could control left to right scrolling of a display item defined in terms of coordinates (Page 97; Hinckley).

Regarding claim 23, Hinckley teaches claim 21, comprising receiving real time indications of the detected incline in the first and second planes and controlling the display to move the item in real time through positions dependent upon the received indications. Hinckley teaches that controls of a display may be variably controlled via dual axis tilt sensor, that is forward and back rotation into the z axis of the x-y Cartesian plane could control up down scrolling as left and right rotation into the z plane of the x-y Cartesian plane could control left to right scrolling of a display (Page 97; Hinckley).

Regarding claim 25, Hinckley teaches a mobile device comprising a display (Figure 1), a processor for controlling the operation of the mobile device including the display (Page 92, Paragraph 9), and an incline sensor arranged to detect inclination of the mobile device in a first plane, wherein the mobile device has an inclinometer mode, in which the processor received an indication of the detected incline in the first plane

from the incline sensor and controls the display to display an item at a positions dependent upon the received indication, wherein the item provides an indication to the user of the incline of the mobile device (Page 92, 1st and 2nd Paragraphs; Page 96 Figure 9, 1st Paragraph). However Hinckley does not explicitly state that the prototype device in question is a cellular phone. Hinckley does teach that cellular telephones are within the scope of the teachings (Page 91, Introduction paragraph). Therefore it would be obvious to one of ordinary skill in the art to implement the teachings of Hinckley into a cellular telephone to provide for a more intimate user experience with the phone.

4. Claims 10 & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinckley in view of Kalinski et al (US 2003/0174307), hereinafter Kalinski.

Regarding claim 10, Hinckley teaches claim 1, however Hinckley fails to teach wherein the incline sensor comprises a first pair of electrodes aligned along the first plane and partially immersed in a liquid for providing a first signal indicative of an incline in the first plane and a second pair of electrodes aligned along a second plane, orthogonal to the first plane and partially immersed in a liquid for providing a second signal indicative of an incline in the second plane. Kalinski teaches wherein the incline sensor comprises a first pair of electrodes aligned along the first plane and partially immersed in a liquid for providing a first signal indicative of an incline in the first plane and a second pair of electrodes aligned along a second plane, orthogonal to the first plane and partially immersed in a liquid for providing a second signal indicative of an incline in the second plane (Page 5, [0079]; Kalinski). Therefore it would have been

obvious to one of ordinary skill in the art to substitute Kalinski's sensor for the accelerometer of Hinckley since they both provide the same purpose and the Hinckley sensor is now out of production.

Regarding claim 24, Hinckley teaches claim 1, however Hinckley fails to disclose wherein the mobile cellular telephone emulates a spirit level when it is in the inclinometer mode. Kalinski implements a sensor which emulates a spirit level, by being a fluid filled level sensor (Page 5, [0079]; Kalinski). Therefore it would have been obvious to one of ordinary skill in the art to substitute Kalinski's sensor for the accelerometer of Hinckley since they both provide the same purpose and the Hinckley sensor is now out of production.

Response to Arguments

5. Applicant's arguments filed 12/17/2007 have been fully considered but they are not persuasive.

6. Regarding applicant's arguments regarding claims 1 & 11 that the Hinckley reference fails to teach an inclinometer mode the examiner respectfully disagrees. As the term 'mode' is dictionary defined as "a method of doing " Hinckley does in fact teach that one method of controlling a screen display, also known as doing something, can be controlled by an tilt sensor analogous to the applicant's claimed 'incline sensor'. That is to say that effecting this 'mode' of operation in the Hinckley reference, applicable at all times, does in fact read on the applicant's claimed 'inclinometer mode' as Hinckley's device obviously acts in a 'tilt-o-meter' mode.

The applicant's assertion that the Hinckley reference fails to teach a mode where the telephone acts as an instrument for enabling a user to measure the inclination of the mobile telephone is irrelevant as this limitation is not claimed.

Furthermore the applicant's unsubstantiated argument that Hinckley fails to disclose a device that has "an inclinometer mode, in which the processor received an indication of the detected incline in the first plane from the incline sensor and then controls the display to display an item at a position dependent upon the received indication" is actually admitted by the applicant in declaring that Hinckley teaches "tilt sensors used to scroll through items on a display [controlling the display via received sensed data] and the rate of scrolling is dependent upon the tilt angle [dependent upon the received tilt indication]" (Applicant remarks; Page 10).

In response to applicant's argument that Hinckley fails to disclose a device which can enable a user to measure the inclination of the device or that the device may be used to measure the inclination of a surface (Applicant Remarks; Page 11). Again the examiner respectfully disagrees; Hinckley teaches that various angles of tilt are associated with various speeds of scrolling through a displayed list of items, therefore greater angle tilt results in faster item scrolling. That is Hinckley is able to measure the inclination of the device in order to affect scroll speed correlated thereto (Page 97; Hinckley).

For the foregoing reasons the independent claims and the dependents thereof remain rejected.

In regards to the applicant's arguments regarding claim 10, the examiner respectfully disagrees. The applicant has objected to the combination of the Hinckley in view of Kalinski applied art. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the examiner has merely made a simple substitution of one sensor type with that of another resulting in a predictable result.

For these foregoing reasons claim 10 remains rejected.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2618

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTIAN A. HANNON whose telephone number is (571)272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. A. H./
Examiner, Art Unit 2618
March 5, 2008

/Edward Urban/
Supervisory Patent Examiner, Art Unit 2618

Application/Control Number: 10/572,710
Art Unit: 2618

Page 15